

Claims

[c1] What is claimed is:

1.A method for forming a metallic structure, the method comprising:

providing a substrate, and disposing a photoresist layer onto the substrate;

performing an exposing and developing process by using a film having a pattern as a mask for patterning the photoresist layer so as to form a photoresist pattern corresponding to the pattern of the film;

forming a seed layer onto the substrate and the photoresist pattern; and

forming a metal layer onto the seed layer by a LIGA process for implementing the metallic structure.

[c2] 2.The method of claim 1 wherein the photoresist layer is selected from a group consisting of a positive wet photoresist, a negative wet photoresist, and a dry photoresist.

[c3] 3.The method of claim 1 wherein the seed layer is formed by evaporating, sputtering, or electroless plating technologies.

- [c4] 4.The method of claim 1 wherein the LIGA process comprises electroforming or electroless plating.
- [c5] 5.The method of claim 1 wherein the exposing and developing process uses a light source selected from a group consisting of a UV light, an IR light, a neutral light, and a laser beam.
- [c6] 6.The method of claim 1 wherein the method further comprises performing a releasing process for releasing the metallic structure from the substrate.
- [c7] 7.The method of claim 1 wherein the metallic structure serves as an insert mold for use in an injection molding machine.
- [c8] 8.A method for forming a picture comprising the following steps:
providing a substrate, and disposing a photoresist layer onto the substrate;
performing an exposing and developing process by using a mask having a pattern to form a photoresist pattern; and
forming a thin film having a pattern corresponding to the pattern of the mask onto the substrate and the photoresist pattern by a thin film process.
- [c9] 9.The method of claim 8 wherein the photoresist layer is

selected from a group consisting of a positive wet photoresist, a negative wet photoresist, and a dry photoresist.

- [c10] 10.The method of claim 8 wherein the thin film process comprises physical vapor deposition, chemical vapor deposition, electroforming, or electroless plating.
- [c11] 11.The method of claim 10 wherein the thin film is a metal layer.
- [c12] 12.The method of claim 11 wherein before the metal layer is formed the method further comprises forming a seed layer, and the seed layer overlies the substrate and the photoresist pattern.
- [c13] 13.The method of claim 12 wherein the seed layer is formed by evaporating, sputtering, or electroless plating.
- [c14] 14.The method of claim 8 wherein the exposing and developing process uses a light source selected from a group consisting of a UV light, an IR light, a neutral light, and a laser beam.
- [c15] 15.The method of claim 8 wherein the method further comprises performing a releasing process for releasing the thin film from the substrate.
- [c16] 16.The method of claim 15 wherein the method further

comprises performing an injection molding process in which the thin film serves as an insert mold for fabricating a multiplicity of pictures each having a pattern complementary to the pattern of the thin film.

[c17] 17.The method of claim 8 wherein the mask is a film.